

1 SEQUENCE LISTING

<110> Lee, Se-Jin
McPherron, Alexandra C.

<120> GROWTH DIFFERENTIATION FACTOR RECEPTORS,
AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME

<130> JHU1470-2

<150> 09/485,046

<151> 2000-01-31

<150> PCT/US98/15598

<151> 1998-07-28

<150> 60/054,461

<151> 1997-08-01

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His Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe
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Ser Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr
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Val	Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu		
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Thr	Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val		
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Lys	Val	Thr	Asp	Thr	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Phe	Gly	Leu	Asp		
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tgc	gat	gaa	cac	tcc	acg	gaa	tcg	cgg	tgc	tgt	cgc	tac	ccc	ctc	acg		864
Cys	Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr		
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gtc	gat	ttc	gaa	gcc	ttt	gga	tgg	gac	tgg	att	att	gca	ccc	aaa	aga		912
Val	Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg		
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tat	aag	gct	aat	tac	tgc	tct	gga	gag	tgt	gaa	ttt	gtg	ttc	tta	caa		960
Tyr	Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu	Phe	Val	Phe	Leu	Gln		
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aaa	tat	ccg	cat	act	cat	ctt	gtg	cac	caa	gca	aac	ccc	aga	ggc	tcg		1008
Lys	Tyr	Pro	His	Thr	His	Leu	Val	His	Gln	Ala	Asn	Pro	Arg	Gly	Ser		
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gca	ggc	cct	tgc	tgc	acg	cca	aca	aaa	atg	tct	ccc	att	aat	atg	cta		1056
Ala	Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu		
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Tyr	Phe	Asn	Gly	Lys	Glu	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Ala	Met		
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Asn	Val	Glu	Lys	Glu	Gly	Leu	Cys	Asn	Ala	Cys	Ala	Trp	Arg	Gln	Asn		
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Thr	Arg	Tyr	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys		
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Leu	Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln		
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Leu	Leu	Pro	Arg	Ala	Pro	Pro	Leu	Arg	Glu	Leu	Ile	Asp	Gln	Tyr	Asp		
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Val	Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr		
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His	Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Phe		
	115					120					125						
Leu	Met	Gln	Ala	Asp	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser		
	130				135						140						
Ser	Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr		
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Leu	Arg	Ala	Val	Lys	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg		
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Leu Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser
 180 185 190
 Leu Lys Leu Asp Met Ser Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp
 195 200 205
 Val Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu
 210 215 220
 Gly Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val
 225 230 235 240
 Thr Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val
 245 250 255
 Lys Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp
 260 265 270
 Cys Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr
 275 280 285
 Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg
 290 295 300
 Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln
 305 310 315 320
 Lys Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser
 325 330 335
 Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu
 340 345 350
 Tyr Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met
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 Val Val Asp Arg Cys Gly Cys Ser
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gcg gtt gat ccg gtg gct ctg gat ggc agt agt cag ccc aca gag aac	96
Ala Val Asp Pro Val Ala Leu Asp Gly Ser Ser Gln Pro Thr Glu Asn	
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gct gaa aaa gac gga ctg tgc aat gct tgt acg tgg aga cag aat aca	144
Ala Glu Lys Asp Gly Leu Cys Asn Ala Cys Thr Trp Arg Gln Asn Thr	
35 40 45	
aaa tcc tcc aga ata gaa gcc ata aaa att caa atc ctc agc aaa ctg	192
Lys Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu	
50 55 60	
cgc ctg gaa caa gca cct aac att agc agg gac gtt att aag cag ctt	240
Arg Leu Glu Gln Ala Pro Asn Ile Ser Arg Asp Val Ile Lys Gln Leu	
65 70 75 80	
tta ccc aaa gct cct cca ctg cag gaa ctg att gat cag tat gat gtc	288
Leu Pro Lys Ala Pro Pro Leu Gln Glu Leu Ile Asp Gln Tyr Asp Val	
85 90 95	

cag agg gac gac agt agc gat ggc tct ttg gaa gac gat gac tat cat	336
Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His	
100 105 110	
gcc aca acc gag acg att atc aca atg cct acg gag tct gat ttt ctt	384
Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu	
115 120 125	
gta caa atg gag gga aaa cca aaa tgt tgc ttc ttt aag ttt agc tct	432
Val Gln Met Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser	
130 135 140	
aaa ata caa tat aac aaa gta gta aag gca caa tta tgg ata tac ttg	480
Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu	
145 150 155 160	
agg caa gtc caa aaa cct aca acg gtg ttt gtg cag atc ctg aga ctc	528
Arg Gln Val Gln Lys Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu	
165 170 175	
att aag ccc atg aaa gac ggt aca aga tat act gga att cga tct ttg	576
Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu	
180 185 190	
aaa ctt gac atg aac cca ggc act ggt atc tgg cag agt att gat gtg	624
Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val	
195 200 205	
aag aca gtg ctg caa aat tgg ctc aaa cag cct gaa tcc aat tta ggc	672
Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly	
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Ile Glu Ile Lys Ala Phe Asp Glu Thr Gly Arg Asp Leu Ala Val Thr	
225 230 235 240	
ttc cca gga cca gga gaa gat gga ttg aac cca ttt tta gag gtc aga	768
Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Arg	
245 250 255	
gtt aca gac aca ccg aaa ccg tcc cgc aga gat ttt ggc ctt gac tgt	816
Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys	
260 265 270	
gat gag cac tca acg gaa tcc cga tgt tgt cgc tac ccg ctg aca gtg	864
Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val	
275 280 285	
gat ttc gaa gct ttt gga tgg gac tgg att ata gca cct aaa aga tac	912
Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr	
290 295 300	
aaa gcc aat tac tgc tcc gga gaa tgc gaa ttt gtg ttt cta cag aaa	960
Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys	
305 310 315 320	
tac ccg cac act cac ctg gta cac caa gca aat ccc aga ggc tca gca	1008
Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala	
325 330 335	

ggc cct tgc tgc aca ccc acc aag atg tcc cct ata aac atg ctg tat 1056
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
 340 345 350

ttc aat gga aaa gaa caa ata ata tat gga aag ata cca gcc atg gtt 1104
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<213> Gallus gallus

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 35 40 45
 Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu Arg
 50 55 60
 Leu Glu Gln Ala Pro Asn Ile Ser Arg Asp Val Ile Lys Gln Leu Leu
 65 70 75 80
 Pro Lys Ala Pro Pro Leu Gln Glu Leu Ile Asp Gln Tyr Asp Val Gln
 85 90 95
 Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His Ala
 100 105 110
 Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu Val
 115 120 125
 Gln Met Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser Lys
 130 135 140
 Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu Arg
 145 150 155 160
 Gln Val Gln Lys Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu Ile
 165 170 175
 Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu Lys
 180 185 190
 Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val Lys
 195 200 205
 Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly Ile
 210 215 220
 Glu Ile Lys Ala Phe Asp Glu Thr Gly Arg Asp Leu Ala Val Thr Phe
 225 230 235 240
 Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Arg Val
 245 250 255
 Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys Asp
 260 265 270
 Glu His Ser Thr Glu Ser Arg Cys Arg Tyr Pro Leu Thr Val Asp
 275 280 285
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Val	Ala	Gly	Pro	Val	Asp	Leu	Asn	Glu	Asn	Ser	Glu	Gln	Lys	Glu	Asn		
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gtg	gaa	aaa	gag	ggg	ctg	tgt	aat	gca	tgt	act	tgg	aga	caa	aac	act		144
Val	Glu	Lys	Glu	Gly	Leu	Cys	Asn	Ala	Cys	Thr	Trp	Arg	Gln	Asn	Thr		
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aaa	tct	tca	aga	ata	gaa	gcc	att	aaa	ata	caa	atc	ctc	agt	aaa	ctt		192
Lys	Ser	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu		
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cgt	ctg	gaa	aca	gct	cct	aac	atc	agc	aaa	gat	gct	ata	aga	caa	ctt		240
Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln	Leu		
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tta	ccc	aaa	gcg	cct	cca	ctc	cgg	gaa	ctg	att	gat	cag	tat	gat	gtc		288
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cag	agg	gat	gac	agc	agc	gat	ggc	tct	ttg	gaa	gat	gac	gat	tat	cac		336
Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His		
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gct	aca	acg	gaa	aca	atc	att	acc	atg	cct	aca	gag	tct	gat	ttt	tta		384
Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Phe	Leu		
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Met	Gln	Val	Asp	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser		
	130					135					140						
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Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	Leu		
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Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu		
			180					185					190				
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Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val		
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Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	Gly		
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Ile	Glu	Ile	Lys	Ala	Leu	Asp	Glu	Asn	Gly	His	Asp	Leu	Ala	Val	Thr		
225					230				235						240		
ttc	cca	gga	cca	gga	gaa	gat	ggg	ctg	aat	ccc	ttt	tta	gag	gtc	aag	768	
Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val	Lys		
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gta	aca	gac	aca	ccc	aaa	aga	tcc	aga	agg	gat	ttt	ggt	ctt	gac	tgt	816	
Val	Thr	Asp	Thr	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Phe	Gly	Leu	Asp	Cys		
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gat	gag	cac	tca	aca	gaa	tcg	cga	tgc	tgt	cgt	tac	cct	cta	act	gtg	864	
Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val		
		275					280					285					
gat	ttt	gaa	gct	ctt	gga	tgg	gat	tgg	att	atc	gct	cct	aaa	aga	tat	912	
Asp	Phe	Glu	Ala	Leu	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr		
	290					295					300						
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Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu	Phe	Val	Phe	Leu	Gln	Lys		
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tat	cct	cat	act	cat	ctg	gta	cac	caa	gca	aac	ccc	aga	ggt	tca	gca	1008	
Tyr	Pro	His	Thr	His	Leu	Val	His	Gln	Ala	Asn	Pro	Arg	Gly	Ser	Ala		
				325					330					335			
ggc	cct	tgc	tgt	act	ccc	aca	aag	atg	tct	cca	att	aat	atg	cta	tat	1056	
Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr		
			340					345					350				
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Phe	Asn	Gly	Lys	Glu	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Ala	Met	Val		
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Val	Asp	Arg	Cys	Gly	Cys	Ser											
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<212> PRT

<213> Baboon

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Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val	Lys
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Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val
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Tyr	Pro	His	Thr	His	Leu	Val	His	Gln	Ala	Asn	Pro	Arg	Gly	Ser	Ala
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Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr
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<213> Bovine

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<222> (1)...(1125)

<400> 11

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Met	Gln	Lys	Leu	Gln	Ile	Ser	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Leu	Ile	
1				5				10						15		

gtt	gct	ggc	cca	gtg	gat	ctg	aat	gag	aac	agc	gag	cag	aag	gaa	aat	96
Val	Ala	Gly	Pro	Val	Asp	Leu	Asn	Glu	Asn	Ser	Glu	Gln	Lys	Glu	Asn	
			20					25					30			

gtg	gaa	aaa	gag	ggg	ctg	tgt	aat	gca	tgt	ttg	tgg	agg	gaa	aac	act	144
Val	Glu	Lys	Glu	Gly	Leu	Cys	Asn	Ala	Cys	Leu	Trp	Arg	Glu	Asn	Thr	
		35					40					45				

aca	tcg	tca	aga	cta	gaa	gcc	ata	aaa	atc	caa	atc	ctc	agt	aaa	ctt	192
Thr	Ser	Ser	Arg	Leu	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu	
	50					55					60					

cgc	ctg	gaa	aca	gct	cct	aac	atc	agc	aaa	gat	gct	atc	aga	caa	ctt	240
Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln	Leu	
65					70					75					80	

ttg	ccc	aag	gct	cct	cca	ctc	ctg	gaa	ctg	att	gat	cag	ttc	gat	gtc	288
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Leu	Glu	Leu	Ile	Asp	Gln	Phe	Asp	Val	
				85					90					95		

cag	aga	gat	gcc	agc	agt	gac	ggc	tcc	ttg	gaa	gac	gat	gac	tac	cac	336
Gln	Arg	Asp	Ala	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His	
			100					105					110			

gcc	agg	acg	gaa	acg	gtc	att	acc	atg	ccc	acg	gag	tct	gat	ctt	cta	384
Ala	Arg	Thr	Glu	Thr	Val	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Leu	Leu	
		115					120					125				

acg	caa	gtg	gaa	gga	aaa	ccc	aaa	tgt	tgc	ttc	ttt	aaa	ttt	agc	tct	432
Thr	Gln	Val	Glu	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser	
	130					135					140					

aaag	ata	caa	tac	aat	aaa	cta	gta	aag	gcc	caa	ctg	tgg	ata	tat	ctg	480
Lys	Ile	Gln	Tyr	Asn	Lys	Leu	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	Leu	
145					150					155					160	

agg	cct	gtc	aag	act	cct	gcg	aca	gtg	ttt	gtg	caa	atc	ctg	aga	ctc	528
Arg	Pro	Val	Lys	Thr	Pro	Ala	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	Leu	
				165					170					175		

atc	aaa	ccc	atg	aaa	gac	ggt	aca	agg	tat	act	gga	atc	cga	tct	ctg	576
Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu	
			180					185					190			

aaa	ctt	gac	atg	aac	cca	ggc	act	ggt	att	tgg	cag	agc	att	gat	gtg	624
Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val	
		195				200						205				

aag	aca	gtg	ttg	cag	aac	tgg	ctc	aaa	caa	cct	gaa	tcc	aac	tta	ggc	672
Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	Gly	
	210					215					220					

att	gaa	atc	aaa	gct	tta	gat	gag	aat	ggc	cat	gat	ctt	gct	gta	acc	720
Ile	Glu	Ile	Lys	Ala	Leu	Asp	Glu	Asn	Gly	His	Asp	Leu	Ala	Val	Thr	
225					230					235				240		

ttc cca gaa cca gga gaa gat gga ctg act ccc ttt tta gaa gtc aag 768
 Phe Pro Glu Pro Gly Glu Asp Gly Leu Thr Pro Phe Leu Glu Val Lys
 245 250 255

gta aca gac aca cca aaa aga tct agg aga gat ttt ggg ctt gat tgt 816
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys
 260 265 270

gat gaa cac tcc aca gaa tct cga tgc tgt cgt tac cct cta act gtg 864
 Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val
 275 280 285

gat ttt gaa gct ttt gga tgg gat tgg att att gca cct aaa aga tat 912
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
 290 295 300

aag gcc aat tac tgc tct gga gaa tgt gaa ttt gta ttt ttg caa aag 960
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys
 305 310 315 320

tat cct cat acc cat ctt gtg cac caa gca aac ccc aga ggt tca gcc 1008
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala
 325 330 335

ggc ccc tgc tgt act cct aca aag atg tct cca att aat atg cta tat 1056
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
 340 345 350

ttt aat ggc gaa gga caa ata ata tac ggg aag att cca gcc atg gta 1104
 Phe Asn Gly Glu Gly Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val
 355 360 365

gta gat cgc tgt ggg tgt tca tga 1128
 Val Asp Arg Cys Gly Cys Ser
 370 375

<210> 12
 <211> 375
 <212> PRT
 <213> Bovine

<400> 12
 Met Gln Lys Leu Gln Ile Ser Val Tyr Ile Tyr Leu Phe Met Leu Ile
 1 5 10 15
 Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn
 20 25 30
 Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Leu Trp Arg Glu Asn Thr
 35 40 45
 Thr Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu
 50 55 60
 Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu
 65 70 75 80
 Leu Pro Lys Ala Pro Pro Leu Leu Glu Leu Ile Asp Gln Phe Asp Val
 85 90 95
 Gln Arg Asp Ala Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His
 100 105 110
 Ala Arg Thr Glu Thr Val Ile Thr Met Pro Thr Glu Ser Asp Leu Leu
 115 120 125

Thr Gln Val Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser
 130 135 140
 Lys Ile Gln Tyr Asn Lys Leu Val Lys Ala Gln Leu Trp Ile Tyr Leu
 145 150 155 160
 Arg Pro Val Lys Thr Pro Ala Thr Val Phe Val Gln Ile Leu Arg Leu
 165 170 175
 Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu
 180 185 190
 Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val
 195 200 205
 Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly
 210 215 220
 Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr
 225 230 235 240
 Phe Pro Glu Pro Gly Glu Asp Gly Leu Thr Pro Phe Leu Glu Val Lys
 245 250 255
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys
 260 265 270
 Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val
 275 280 285
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
 290 295 300
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys
 305 310 315 320
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala
 325 330 335
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
 340 345 350
 Phe Asn Gly Glu Gly Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val
 355 360 365
 Val Asp Arg Cys Gly Cys Ser
 370 375

<210> 13
 <211> 1128
 <212> DNA
 <213> Porcine

<220>
 <221> CDS
 <222> (1)...(1125)

<400> 13
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 Met Gln Lys Leu Gln Ile Tyr Val Tyr Ile Tyr Leu Phe Met Leu Ile
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 gtt gct ggt ccc gtg gat ctg aat gag aac agc gag caa aag gaa aat 96
 Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn
 20 25 30
 gtg gaa aaa gag ggg ctg tgt aat gca tgt atg tgg aga caa aac act 144
 Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Met Trp Arg Gln Asn Thr
 35 40 45
 aaa tct tca aga cta gaa gcc ata aaa att caa atc ctc agt aaa ctt 192
 Lys Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu
 50 55 60
 cgc ctg gaa aca gct cct aac att agc aaa gat gct ata aga caa ctt 240

Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln	Leu	
65					70					75					80	
ttg	ccc	aaa	gct	cct	cca	ctc	cgg	gaa	ctg	att	gat	cag	tac	gat	gtc	288
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Arg	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	Val	
			85						90					95		
cag	aga	gat	gac	agc	agt	gat	ggc	tcc	ttg	gaa	gat	gat	gat	tat	cac	336
Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His	
			100					105						110		
gct	acg	acg	gaa	acg	atc	att	acc	atg	cct	aca	gag	tct	gat	ctt	cta	384
Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Leu	Leu	
			115				120						125			
atg	caa	gtg	gaa	gga	aaa	ccc	aaa	tgc	tgc	ttc	ttt	aaa	ttt	agc	tct	432
Met	Gln	Val	Glu	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser	
	130					135					140					
aaa	ata	caa	tac	aat	aaa	gta	gta	aag	gcc	caa	ctg	tgg	ata	tat	ctg	480
Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	Leu	
145					150					155					160	
aga	ccc	gtc	aag	act	cct	aca	aca	gtg	ttt	gtg	caa	atc	ctg	aga	ctc	528
Arg	Pro	Val	Lys	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	Leu	
				165					170					175		
atc	aaa	ccc	atg	aaa	gac	ggc	aca	agg	tat	act	gga	atc	cga	tct	ctg	576
Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu	
			180					185					190			
aaa	ctt	gac	atg	aac	cca	ggc	act	ggc	att	tgg	cag	agc	att	gat	gtg	624
Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val	
		195					200					205				
aag	aca	gtg	ttg	caa	aat	tgg	ctc	aaa	caa	cct	gaa	tcc	aac	tta	ggc	672
Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	Gly	
	210					215					220					
att	gaa	atc	aaa	gct	tta	gat	gag	aat	ggc	cat	gat	ctt	gct	gta	acc	720
Ile	Glu	Ile	Lys	Ala	Leu	Asp	Glu	Asn	Gly	His	Asp	Leu	Ala	Val	Thr	
225					230				235						240	
ttc	cca	gga	cca	gga	gaa	gat	ggg	ctg	aat	ccc	ttt	tta	gaa	gtc	aag	768
Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val	Lys	
				245					250					255		
gta	aca	gac	aca	cca	aaa	aga	tcc	agg	aga	gat	ttt	gga	ctc	gac	tgt	816
Val	Thr	Asp	Thr	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Phe	Gly	Leu	Asp	Cys	
			260					265					270			
gat	gag	cac	tca	aca	gaa	tct	cga	tgc	tgt	cgt	tac	cct	cta	act	gtg	864
Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val	
		275					280					285				
gat	ttt	gaa	gct	ttt	gga	tgg	gac	tgg	att	att	gca	ccc	aaa	aga	tat	912
Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr	
	290					295					300					
aag	gcc	aat	tac	tgc	tct	gga	gag	tgt	gaa	ttt	gta	ttt	tta	caa	aaa	960

Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys
305 310 315 320

tac cct cac act cat ctt gtg cac caa gca aac ccc aga ggt tca gca 1008
Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala
325 330 335

ggc ccc tgc tgt act ccc aca aag atg tct cca atc aat atg cta tat 1056
Gly Pro Cys Lys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
340 345 350

ttt aat ggc aaa gaa caa ata ata tat ggg aaa att cca gcc atg gta 1104
Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val
355 360 365

gta gat cgc tgt ggg tgc tca tga 1128
Val Asp Arg Cys Gly Cys Ser
370 375

<210> 14

<211> 375

<212> PRT

<213> Porcine

<400> 14

Met Gln Lys Leu Gln Ile Tyr Val Tyr Ile Tyr Leu Phe Met Leu Ile
1 5 10 15
Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn
20 25 30
Val Glu Lys Glu Gly Leu Cys Asn Ala Cys Met Trp Arg Gln Asn Thr
35 40 45
Lys Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu
50 55 60
Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu
65 70 75 80
Leu Pro Lys Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp Val
85 90 95
Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His
100 105 110
Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Leu Leu
115 120 125
Met Gln Val Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser
130 135 140
Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu
145 150 155 160
Arg Pro Val Lys Thr Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu
165 170 175
Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu
180 185 190
Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val
195 200 205
Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly
210 215 220
Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr
225 230 235 240
Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Lys
245 250 255
Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys
260 265 270

Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val
	275						280					285			
Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr
	290					295					300				
Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu	Phe	Val	Phe	Leu	Gln	Lys
305					310					315					320
Tyr	Pro	His	Thr	His	Leu	Val	His	Gln	Ala	Asn	Pro	Arg	Gly	Ser	Ala
			325						330					335	
Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr
			340					345					350		
Phe	Asn	Gly	Lys	Glu	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Ala	Met	Val
	355						360					365			
Val	Asp	Arg	Cys	Gly	Cys	Ser									
	370					375									

<210> 15

<211> 1128

<212> DNA

<213> Ovine

<220>

<221> CDS

<222> (1)... (1125)

<400> 15

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Met	Gln	Lys	Leu	Gln	Ile	Phe	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Leu	Leu	
1				5				10						15		
gtt	gct	ggc	cca	gtg	gat	ctg	aat	gag	aac	agc	gag	cag	aag	gaa	aat	96
Val	Ala	Gly	Pro	Val	Asp	Leu	Asn	Glu	Asn	Ser	Glu	Gln	Lys	Glu	Asn	
			20					25					30			
gtg	gaa	aaa	aag	ggg	ctg	tgt	aat	gca	tgc	ttg	tgg	aga	caa	aac	aat	144
Val	Glu	Lys	Lys	Gly	Leu	Cys	Asn	Ala	Cys	Leu	Trp	Arg	Gln	Asn	Asn	
		35					40					45				
aaa	tcc	tca	aga	cta	gaa	gcc	ata	aaa	atc	caa	atc	ctc	agt	aag	ctt	192
Lys	Ser	Ser	Arg	Leu	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu	
	50					55					60					
cgc	ctg	gaa	aca	gct	cct	aac	atc	agc	aaa	gat	gct	ata	aga	caa	ctt	240
Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Ala	Ile	Arg	Gln	Leu	
	65				70				75						80	
ttg	ccc	aag	gct	cct	cca	ctc	cgg	gaa	ctg	att	gat	cag	tac	gat	gtc	288
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Arg	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	Val	
				85					90					95		
cag	aga	gat	gac	agc	agc	gac	ggc	tcc	ttg	gaa	gac	gat	gac	tac	cac	336
Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His	
			100				105					110				
gtt	acg	acg	gaa	acg	gtc	att	acc	atg	ccc	acg	gag	tct	gat	ctt	cta	384
Val	Thr	Thr	Glu	Thr	Val	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Leu	Leu	
		115					120					125				
gca	gaa	gtg	caa	gaa	aaa	ccc	aaa	tgt	tgc	ttc	ttt	aaa	ttt	agc	tct	432
Ala	Glu	Val	Gln	Glu	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser	
	130					135					140					

at
I
22
tt
ph
E
gt
Va
ga
As
Co

<210> 16
 <211> 375
 <212> PRT
 <213> Ovine

<400> 16

Met Gln Lys Leu Gln Ile Phe Val Tyr Ile Tyr Leu Phe Met Leu Leu
 1 5 10 15
 Val Ala Gly Pro Val Asp Leu Asn Glu Asn Ser Glu Gln Lys Glu Asn
 20 25 30
 Val Glu Lys Lys Gly Leu Cys Asn Ala Cys Leu Trp Arg Gln Asn Asn
 35 40 45
 Lys Ser Ser Arg Leu Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu
 50 55 60
 Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Ala Ile Arg Gln Leu
 65 70 75 80
 Leu Pro Lys Ala Pro Pro Leu Arg Glu Leu Ile Asp Gln Tyr Asp Val
 85 90 95
 Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His
 100 105 110
 Val Thr Thr Glu Thr Val Ile Thr Met Pro Thr Glu Ser Asp Leu Leu
 115 120 125
 Ala Glu Val Gln Glu Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser
 130 135 140
 Lys Ile Gln His Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu
 145 150 155 160
 Arg Pro Val Lys Thr Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu
 165 170 175
 Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu
 180 185 190
 Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val
 195 200 205
 Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly
 210 215 220
 Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val Thr
 225 230 235 240
 Phe Pro Glu Pro Gly Glu Glu Gly Leu Asn Pro Phe Leu Glu Val Lys
 245 250 255
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys
 260 265 270
 Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val
 275 280 285
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
 290 295 300
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Leu Phe Leu Gln Lys
 305 310 315 320
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Lys Gly Ser Ala
 325 330 335
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
 340 345 350
 Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val
 355 360 365
 Val Asp Arg Cys Gly Cys Ser
 370 375

<210> 17
 <211> 1128
 <212> DNA

<213> Meleagris gallopavo

<220>

<221> CDS

<222> (1)...(1125)

<400> 17

atg	caa	aag	cta	gca	gtc	tat	gtt	tat	att	tac	ctg	ttc	atg	cag	att	48
Met	Gln	Lys	Leu	Ala	Val	Tyr	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Gln	Ile	
1				5					10					15		

tta	gtt	cat	ccg	gtg	gct	ctt	gat	ggc	agt	agt	cag	ccc	aca	gag	aac	96
Leu	Val	His	Pro	Val	Ala	Leu	Asp	Gly	Ser	Ser	Gln	Pro	Thr	Glu	Asn	
			20					25					30			

gct	gaa	aaa	gac	gga	ctg	tgc	aat	gct	tgc	acg	tgg	aga	cag	aat	act	144
Ala	Glu	Lys	Asp	Gly	Leu	Cys	Asn	Ala	Cys	Thr	Trp	Arg	Gln	Asn	Thr	
		35					40					45				

aaa	tcc	tcc	aga	ata	gaa	gcc	ata	aaa	att	caa	atc	ctc	agc	aaa	ctg	192
Lys	Ser	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu	
	50					55					60					

cgc	ctg	gaa	caa	gca	cct	aac	att	agc	agg	gac	gtt	att	aaa	caa	ctt	240
Arg	Leu	Glu	Gln	Ala	Pro	Asn	Ile	Ser	Arg	Asp	Val	Ile	Lys	Gln	Leu	
65					70				75					80		

tta	ccc	aaa	gct	cct	ccg	ctg	cag	gaa	ctg	att	gat	cag	tat	gac	gtc	288
Leu	Pro	Lys	Ala	Pro	Pro	Leu	Gln	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	Val	
				85					90					95		

cag	aga	gac	gac	agt	agc	gat	ggc	tct	ttg	gaa	gac	gat	gac	tat	cat	336
Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	His	
		100					105						110			

gcc	aca	acc	gaa	acg	att	atc	aca	atg	cct	acg	gag	tct	gat	ttt	ctt	384
Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Phe	Leu	
		115					120					125				

gta	caa	atg	gag	gga	aaa	cca	aaa	tgt	tgc	ttc	ttt	aag	ttt	agc	tct	432
Val	Gln	Met	Glu	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	Ser	
	130					135					140					

aaa	ata	caa	tat	aac	aaa	gta	gta	aag	gca	caa	tta	tgg	ata	tac	ttg	480
Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	Leu	
145					150				155						160	

agg	caa	gtc	caa	aaa	cct	aca	acg	gtg	ttt	gtg	cag	atc	ctg	aga	ctc	528
Arg	Gln	Val	Gln	Lys	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	Leu	
				165				170					175			

att	aaa	ccc	atg	aaa	gac	ggt	aca	aga	tat	act	gga	att	cga	tct	ttg	576
Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	Leu	
			180				185					190				

aaa	ctt	gac	atg	aac	cca	ggc	act	ggt	atc	tgg	cag	agt	att	gat	gtg	624
Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	Val	
		195				200					205					

aag	aca	gtg	ttg	caa	aat	tgg	ctc	aaa	cag	cct	gaa	tcc	aat	tta	ggc	672
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Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	Gly		
210						215					220						
atc	gaa	ata	aaa	gct	ttt	gat	gag	aat	gga	cga	gat	ctt	gct	gta	aca	720	
Ile	Glu	Ile	Lys	Ala	Phe	Asp	Glu	Asn	Gly	Arg	Asp	Leu	Ala	Val	Thr		
225					230				235						240		
ttc	cca	gga	cca	ggt	gaa	gat	gga	ctg	aac	cca	ttt	tta	gag	gtc	aga	768	
Phe	Pro	Gly	Pro	Gly	Glu	Asp	Gly	Leu	Asn	Pro	Phe	Leu	Glu	Val	Arg		
				245					250					255			
gtt	aca	gac	aca	cca	aaa	cgg	tcc	cgc	aga	gat	ttt	ggc	ctt	gac	tgc	816	
Val	Thr	Asp	Thr	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Phe	Gly	Leu	Asp	Cys		
			260					265					270				
gac	gag	cac	tca	acg	gaa	tct	cga	tgt	tgt	cgc	tac	ccg	ctg	aca	gtg	864	
Asp	Glu	His	Ser	Thr	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val		
		275					280					285					
gat	ttt	gaa	gct	ttt	gga	tgg	gac	tgg	att	ata	gca	cct	aaa	aga	tac	912	
Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr		
	290					295					300						
aaa	gcc	aat	tac	tgc	tct	gga	gaa	tgt	gaa	ttc	gta	ttt	cta	cag	aaa	960	
Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu	Phe	Val	Phe	Leu	Gln	Lys		
305					310					315					320		
tac	ccg	cac	act	cac	ctg	gta	cac	caa	gca	aat	cca	aga	ggc	tca	gca	1008	
Tyr	Pro	His	Thr	His	Leu	Val	His	Gln	Ala	Asn	Pro	Arg	Gly	Ser	Ala		
				325				330						335			
ggc	cct	tgc	tgc	aca	ccc	acc	aag	atg	tcc	cct	ata	aac	atg	ctg	tat	1056	
Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr		
				340				345					350				
ttc	aat	gga	aaa	gaa	caa	ata	ata	tat	gga	aag	ata	cca	gcc	atg	gtt	1104	
Phe	Asn	Gly	Lys	Glu	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Ala	Met	Val		
		355				360						365					
gta	gat	cgt	tgc	ggg	tgc	tca	tga									1128	
Val	Asp	Arg	Cys	Gly	Cys	Ser											
		370				375											

<210> 18

<211> 375

<212> PRT

<213> Meleagris gallopavo

<400> 18

Met	Gln	Lys	Leu	Ala	Val	Tyr	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Gln	Ile		
1				5					10					15			
Leu	Val	His	Pro	Val	Ala	Leu	Asp	Gly	Ser	Ser	Gln	Pro	Thr	Glu	Asn		
			20					25					30				
Ala	Glu	Lys	Asp	Gly	Leu	Cys	Asn	Ala	Cys	Thr	Trp	Arg	Gln	Asn	Thr		
		35					40					45					
Lys	Ser	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	Leu		
	50					55				60							
Arg	Leu	Glu	Gln	Ala	Pro	Asn	Ile	Ser	Arg	Asp	Val	Ile	Lys	Gln	Leu		
65					70					75					80		

Leu Pro Lys Ala Pro Pro Leu Gln Glu Leu Ile Asp Gln Tyr Asp Val
 85 90 95
 Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His
 100 105 110
 Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu
 115 120 125
 Val Gln Met Glu Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser
 130 135 140
 Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu
 145 150 155 160
 Arg Gln Val Gln Lys Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu
 165 170 175
 Ile Lys Pro Met Lys Asp Gly Thr Arg Tyr Thr Gly Ile Arg Ser Leu
 180 185 190
 Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val
 195 200 205
 Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly
 210 215 220
 Ile Glu Ile Lys Ala Phe Asp Glu Asn Gly Arg Asp Leu Ala Val Thr
 225 230 235 240
 Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Arg
 245 250 255
 Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp Cys
 260 265 270
 Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val
 275 280 285
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
 290 295 300
 Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys
 305 310 315 320
 Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala
 325 330 335
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
 340 345 350
 Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val
 355 360 365
 Val Asp Arg Cys Gly Cys Ser
 370 375

<210> 19

<211> 1125

<212> DNA

<213> Danio rerio

<220>

<221> CDS

<222> (1)...(1122)

<400> 19

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 Met His Phe Thr Gln Val Leu Ile Ser Leu Ser Val Leu Ile Ala Cys
 1 5 10 15

48

ggt cca gtg ggt tat gga gat ata acg gcg cac cag cag cct tcc aca
 Gly Pro Val Gly Tyr Gly Asp Ile Thr Ala His Gln Gln Pro Ser Thr
 20 25 30

96

gcc acg gag gaa agc gag ctg tgt tcc aca tgt gag ttc aga caa cac
 Ala Thr Glu Glu Ser Glu Leu Cys Ser Thr Cys Glu Phe Arg Gln His
 35 40 45

144

agc aag ctg atg aga ctg cat gcc atc aag tcc caa att ctt agc aaa	192
Ser Lys Leu Met Arg Leu His Ala Ile Lys Ser Gln Ile Leu Ser Lys	
50 55 60	
ctc cga ctc aag cag gct cca aac atc agc cgg gac gtg gtc aag cag	240
Leu Arg Leu Lys Gln Ala Pro Asn Ile Ser Arg Asp Val Val Lys Gln	
65 70 75 80	
ctg tta ccc aaa gca ccg cct ttg caa caa ctt ctg gat cag tac gat	288
Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Leu Leu Asp Gln Tyr Asp	
85 90 95	
gtt tta gga gat gac agt aag gat gga gct gtg gaa gag gac gat gaa	336
Val Leu Gly Asp Asp Ser Lys Asp Gly Ala Val Glu Glu Asp Asp Glu	
100 105 110	
cat gcc acc aca gag acc atc atg acc atg gcc aca gaa cct gac ccc	384
His Ala Thr Thr Glu Thr Ile Met Thr Met Ala Thr Glu Pro Asp Pro	
115 120 125	
att gtt caa gta gat cgg aaa ccg aag tgt tgc ttt ttc tcc ttc agt	432
Ile Val Gln Val Asp Arg Lys Pro Lys Cys Cys Phe Phe Ser Phe Ser	
130 135 140	
ccg aag atc caa gcg aac ccg atc gta aga gcg cag ctc tgg gtt cat	480
Pro Lys Ile Gln Ala Asn Arg Ile Val Arg Ala Gln Leu Trp Val His	
145 150 155 160	
ctg aga ccg gcg gag gag gcg acc acc gtc ttc tta cag ata tct cgg	528
Leu Arg Pro Ala Glu Glu Ala Thr Thr Val Phe Leu Gln Ile Ser Arg	
165 170 175	
ctg atg ccc gtt aag gac gga gga aga cac cga ata cga tcc ctg aaa	576
Leu Met Pro Val Lys Asp Gly Gly Arg His Arg Ile Arg Ser Leu Lys	
180 185 190	
tatc gac gtg aac gca gga gtc acg tct tgg cag agt ata gac gta aag	624
Ile Asp Val Asn Ala Gly Val Thr Ser Trp Gln Ser Ile Asp Val Lys	
195 200 205	
cag gtg ctc acg gtg tgg tta aaa caa ccg gag acc aac cga ggc atc	672
Gln Val Leu Thr Val Trp Leu Lys Gln Pro Glu Thr Asn Arg Gly Ile	
210 215 220	
gag att aac gca tat gac gcg aag gga aac gac ttg gcc gtc act tca	720
Glu Ile Asn Ala Tyr Asp Ala Lys Gly Asn Asp Leu Ala Val Thr Ser	
225 230 235 240	
acc gag act ggg gag gat gga ctg ctc ccc ttt atg gag gtg aaa ata	768
Thr Glu Thr Gly Glu Asp Gly Leu Leu Pro Phe Met Glu Val Lys Ile	
245 250 255	
tca gag ggc cca aaa cga atc ccg agg gac tcc gga ctg gac tgc gat	816
Ser Glu Gly Pro Lys Arg Ile Arg Arg Asp Ser Gly Leu Asp Cys Asp	
260 265 270	
gag aat tcc tca gag tct cgc tgc tgc agg tac cct ctc act gtg gac	864
Glu Asn Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp	
275 280 285	

ttc gag gac ttt ggc tgg gac tgg att att gct cca aaa cgc tat aag 912
 Phe Glu Asp Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys
 290 295 300

gcg aat tac tgt tca gga gaa tgc gac tac atg tac ctg cag aag tat 960
 Ala Asn Tyr Cys Ser Gly Glu Cys Asp Tyr Met Tyr Leu Gln Lys Tyr
 305 310 315 320

ccc cac acc cat ctg gtg aac aag gcc agt ccg aga gga acg gct ggg 1008
 Pro His Thr His Leu Val Asn Lys Ala Ser Pro Arg Gly Thr Ala Gly
 325 330 335

ccc tgc tgc act ccc acc aag atg tct ccc atc aac atg ctt tac ttt 1056
 Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe
 340 345 350

aac ggc aaa gag cag atc atc tac ggc aag atc cct tcg atg gta gta 1104
 Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ser Met Val Val
 355 360 365

gac cgc tgt ggc tgc tca tga 1125
 Asp Arg Cys Gly Cys Ser
 370

<210> 20

<211> 374

<212> PRT

<213> Danio rerio

<400> 20

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 20 25 30
 Ala Thr Glu Ser Glu Leu Cys Ser Thr Cys Glu Phe Arg Gln His
 35 40 45
 Ser Lys Leu Met Arg Leu His Ala Ile Lys Ser Gln Ile Leu Ser Lys
 50 55 60
 Leu Arg Leu Lys Gln Ala Pro Asn Ile Ser Arg Asp Val Val Lys Gln
 65 70 75 80
 Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Leu Leu Asp Gln Tyr Asp
 85 90 95
 Val Leu Gly Asp Asp Ser Lys Asp Gly Ala Val Glu Glu Asp Asp Glu
 100 105 110
 His Ala Thr Thr Glu Thr Ile Met Thr Met Ala Thr Glu Pro Asp Pro
 115 120 125
 Ile Val Gln Val Asp Arg Lys Pro Lys Cys Cys Phe Phe Ser Phe Ser
 130 135 140
 Pro Lys Ile Gln Ala Asn Arg Ile Val Arg Ala Gln Leu Trp Val His
 145 150 155 160
 Leu Arg Pro Ala Glu Ala Thr Thr Val Phe Leu Gln Ile Ser Arg
 165 170 175
 Leu Met Pro Val Lys Asp Gly Gly Arg His Arg Ile Arg Ser Leu Lys
 180 185 190
 Ile Asp Val Asn Ala Gly Val Thr Ser Trp Gln Ser Ile Asp Val Lys
 195 200 205
 Gln Val Leu Thr Val Trp Leu Lys Gln Pro Glu Thr Asn Arg Gly Ile
 210 215 220

Glu	Ile	Asn	Ala	Tyr	Asp	Ala	Lys	Gly	Asn	Asp	Leu	Ala	Val	Thr	Ser
225					230				235						240
Thr	Glu	Thr	Gly	Glu	Asp	Gly	Leu	Leu	Pro	Phe	Met	Glu	Val	Lys	Ile
			245						250					255	
Ser	Glu	Gly	Pro	Lys	Arg	Ile	Arg	Arg	Asp	Ser	Gly	Leu	Asp	Cys	Asp
			260						265					270	
Glu	Asn	Ser	Ser	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val	Asp
		275						280					285		
Phe	Glu	Asp	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr	Lys
	290					295					300				
Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Asp	Tyr	Met	Tyr	Leu	Gln	Lys	Tyr
305					310					315					320
Pro	His	Thr	His	Leu	Val	Asn	Lys	Ala	Ser	Pro	Arg	Gly	Thr	Ala	Gly
				325					330					335	
Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr	Phe
			340					345					350		
Asn	Gly	Lys	Glu	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Ser	Met	Val	Val
	355						360					365			
Asp	Arg	Cys	Gly	Cys	Ser										
	370														

<210> 21

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> proteolytic cleavage site

<221> VARIANT

<222> (0)...(0)

<223> Xaa = Any Amino Acid

<400> 21

Arg Xaa Xaa Arg

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<210> 22

<211> 4

<212> PRT

<213> Eukaryotes

<220>

<221> SITE

<222> (0)...(0)

<223> proteolytic processing site

<400> 22

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<210> 23

<211> 4

<212> PRT

<213> Eukaryotes

<220>

<221> SITE

<222> (0)...(0)

<223> proteolytic processing site

<400> 23
Arg Ile Arg Arg
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<210> 24
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<212> DNA
<213> Homo sapiens

<220>
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<400> 24
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Val Leu Ala Ala Pro Leu Leu Leu Gly Phe Leu Leu Leu Ala Leu Glu
5 10 15

ctg cgg ccc cgg ggg gag gcg gcc gag ggc ccc gcg gcg gcg gcg gcg 152
Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala Ala Ala
20 25 30

gcg gcg gcg gcg gcg gca gcg gcg ggg gtc ggg ggg gag cgc tcc agc 200
Ala Ala Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg Ser Ser
35 40 45

cgg cca gcc ccg tcc gtg gcg ccc gag ccg gac ggc tgc ccc gtg tgc 248
Arg Pro Ala Pro Ser Val Ala Pro Glu Pro Asp Gly Cys Pro Val Cys
50 55 60 65

gtt tgg cgg cag cac agc cgc gag ctg cgc cta gag agc atc aag tgc 296
Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile Lys Ser
70 75 80

cag atc ttg agc aaa ctg cgg ctc aag gag gcg ccc aac atc agc cgc 344
Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile Ser Arg
85 90 95

gag gtg gtg aag cag ctg ctg ccc aag gcg ccg ccg ctg cag cag atc 392
Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Ile
100 105 110

ctg gac cta cac gac ttc cag ggc gac gcg ctg cag ccc gag gac ttc 440
Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu Asp Phe
115 120 125

ctg gag gag gac gag tac cac gcc acc acc gag acc gtc att agc atg 488
Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile Ser Met
130 135 140 145

gcc cag gag acg gac cca gca gta cag aca gat ggc agc cct ctc tgc 536
Ala Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly Ser Pro Leu Cys
150 155 160

tgc cat ttt cac ttc agc ccc aag gtg atg ttc aca aag gta ctg aag	584
Cys His Phe His Phe Ser Pro Lys Val Met Phe Thr Lys Val Leu Lys	
165 170 175	
gcc cag ctg tgg gtg tac cta cgg cct gta ccc cgc cca gcc aca gtc	632
Ala Gln Leu Trp Val Tyr Leu Arg Pro Val Pro Arg Pro Ala Thr Val	
180 185 190	
tac ctg cag atc ttg cga cta aaa ccc cta act ggg gaa ggg acc gca	680
Tyr Leu Gln Ile Leu Arg Leu Lys Pro Leu Thr Gly Glu Gly Thr Ala	
195 200 205	
ggg gga ggg ggc gga ggc cgg cgt cac atc cgt atc cgc tca ctg aag	728
Gly Gly Gly Gly Gly Gly Arg Arg His Ile Arg Ile Arg Ser Leu Lys	
210 215 220 225	
att gag ctg cac tca cgc tca ggc cat tgg cag agc atc gac ttc aag	776
Ile Glu Leu His Ser Arg Ser Gly His Trp Gln Ser Ile Asp Phe Lys	
230 235 240	
caa gtg cta cac agc tgg ttc cgc cag cca cag agc aac tgg ggc atc	824
Gln Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn Trp Gly Ile	
245 250 255	
gag atc aac gcc ttt gat ccc agt ggc aca gac ctg gct gtc acc tcc	872
Glu Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala Val Thr Ser	
260 265 270	
ctg ggg ccg gga gcc gag ggg ctg cat cca ttc atg gag ctt cga gtc	920
Leu Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu Leu Arg Val	
275 280 285	
cta gag aac aca aaa cgt tcc cgg cgg aac ctg ggt ctg gac tgc gac	968
Leu Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu Asp Cys Asp	
290 295 300 305	
gag cac tca agc gag tcc cgc tgc tgc cga tat ccc ctc aca gtg gac	1016
Glu His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp	
310 315 320	
ttt gag gct ttc ggc tgg gac tgg atc atc gca cct aag cgc tac aag	1064
Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys	
325 330 335	
gcc aac tac tgc tcc ggc cag tgc gag tac atg ttc atg caa aaa tat	1112
Ala Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met Gln Lys Tyr	
340 345 350	
ccg cat acc cat ttg gtg cag cag gcc aat cca aga ggc tct gct ggg	1160
Pro His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly Ser Ala Gly	
355 360 365	
ccc tgt tgt acc ccc acc aag atg tcc cca atc aac atg ctc tac ttc	1208
Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe	
370 375 380 385	
aat gac aag cag cag att atc tac ggc aag atc cct ggc atg gtg gtg	1256
Asn Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val Val	
390 395 400	

gat cgc tgt ggc tgc tct taagtgggtc actacaagct gctggagcaa
 Asp Arg Cys Gly Cys Ser
 405.

1304

agacttggtg ggtgggtaac ttaacctctt cacagaggat aaaaaatgct tgtgagtatg
 acagaaggga ataaacaggc ttaaagggt

1364

1393

<210> 25

<211> 407

<212> PRT

<213> Homo sapiens

<400> 25

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Glu	Leu	Arg	Pro	Arg	Gly	Glu	Ala	Ala	Glu	Gly	Pro	Ala	Ala	Ala	Ala
			20					25					30		
Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Gly	Val	Gly	Gly	Glu	Arg	Ser
			35				40					45			
Ser	Arg	Pro	Ala	Pro	Ser	Val	Ala	Pro	Glu	Pro	Asp	Gly	Cys	Pro	Val
			50				55				60				
Cys	Val	Trp	Arg	Gln	His	Ser	Arg	Glu	Leu	Arg	Leu	Glu	Ser	Ile	Lys
					70					75					80
Ser	Gln	Ile	Leu	Ser	Lys	Leu	Arg	Leu	Lys	Glu	Ala	Pro	Asn	Ile	Ser
				85					90					95	
Arg	Glu	Val	Val	Lys	Gln	Leu	Leu	Pro	Lys	Ala	Pro	Pro	Leu	Gln	Gln
			100					105						110	
Ile	Leu	Asp	Leu	His	Asp	Phe	Gln	Gly	Asp	Ala	Leu	Gln	Pro	Glu	Asp
		115					120					125			
Phe	Leu	Glu	Glu	Asp	Glu	Tyr	His	Ala	Thr	Thr	Glu	Thr	Val	Ile	Ser
		130				135					140				
Met	Ala	Gln	Glu	Thr	Asp	Pro	Ala	Val	Gln	Thr	Asp	Gly	Ser	Pro	Leu
					150					155					160
Cys	Cys	His	Phe	His	Phe	Ser	Pro	Lys	Val	Met	Phe	Thr	Lys	Val	Leu
				165					170					175	
Lys	Ala	Gln	Leu	Trp	Val	Tyr	Leu	Arg	Pro	Val	Pro	Arg	Pro	Ala	Thr
			180					185						190	
Val	Tyr	Leu	Gln	Ile	Leu	Arg	Leu	Lys	Pro	Leu	Thr	Gly	Glu	Gly	Thr
		195					200					205			
Ala	Gly	Gly	Gly	Gly	Gly	Gly	Arg	Arg	His	Ile	Arg	Ile	Arg	Ser	Leu
		210				215					220				
Lys	Ile	Glu	Leu	His	Ser	Arg	Ser	Gly	His	Trp	Gln	Ser	Ile	Asp	Phe
					230				235						240
Lys	Gln	Val	Leu	His	Ser	Trp	Phe	Arg	Gln	Pro	Gln	Ser	Asn	Trp	Gly
				245					250					255	
Ile	Glu	Ile	Asn	Ala	Phe	Asp	Pro	Ser	Gly	Thr	Asp	Leu	Ala	Val	Thr
			260					265					270		
Ser	Leu	Gly	Pro	Gly	Ala	Glu	Gly	Leu	His	Pro	Phe	Met	Glu	Leu	Arg
		275					280					285			
Val	Leu	Glu	Asn	Thr	Lys	Arg	Ser	Arg	Arg	Asn	Leu	Gly	Leu	Asp	Cys
		290					295				300				
Asp	Glu	His	Ser	Ser	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr	Val
					310					315					320
Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg	Tyr
				325					330					335	
Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Gln	Cys	Glu	Tyr	Met	Phe	Met	Gln	Lys
			340					345					350		
Tyr	Pro	His	Thr	His	Leu	Val	Gln	Gln	Ala	Asn	Pro	Arg	Gly	Ser	Ala
		355					360						365		
Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu	Tyr

1304
 1364
 1393

370		375		380
Phe Asn Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val				
385		390		400
Val Asp Arg Cys Gly Cys Ser				
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aag gga aat gat ctg gcc gtt acc tca gca gaa gcg gga gaa gga ctg 95
 Lys Gly Asn Asp Leu Ala Val Thr Ser Ala Glu Ala Gly Glu Gly Leu
 20 25 30

caa ccc ttc atg gag gtg acg att tca gag ggc ccg aag cgc tcc agg 143
 Gln Pro Phe Met Glu Val Thr Ile Ser Glu Gly Pro Lys Arg Ser Arg
 35 40 45

aga gac tcg ggc ctg gac tgt gac gag aac tcc ccc gag tcc cgc tgt 191
 Arg Asp Ser Gly Leu Asp Cys Asp Glu Asn Ser Pro Glu Ser Arg Cys
 50 55 60

tgc cgc tac ccc ctc acg gta gac ttt gaa gac ttt ggc tgg gac tgg 239
 Cys Arg Tyr Pro Leu Thr Val Asp Phe Glu Asp Phe Gly Trp Asp Trp
 65 70 75

att att gcc ccc aag cgc tac aag gcc aac tac tgc tct ggt gag tgt 287
 Ile Ile Ala Pro Lys Arg Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys
 80 85 90 95

gag tac atg cac ctg cag aag tac ccc cac acc cac ctg gtg aac aag 335
 Glu Tyr Met His Leu Gln Lys Tyr Pro His Thr His Leu Val Asn Lys
 100 105 110

gct aac cct cgc ggc acc gca ggg ccc tgc tgc acc ccc acc aag atg 383
 Ala Asn Pro Arg Gly Thr Ala Gly Pro Cys Cys Thr Pro Thr Lys Met
 115 120 125

tcc ccc atc aac atg ctc tac ttc aac cgc aaa gag cag atc atc tac 431
 Ser Pro Ile Asn Met Leu Tyr Phe Asn Arg Lys Glu Gln Ile Ile Tyr
 130 135 140

ggc aag atc ccc tcc atg gtg gtg gac cgt tgc gga tgc tcg 473
 Gly Lys Ile Pro Ser Met Val Val Asp Arg Cys Gly Cys Ser
 145 150 155

tga 476

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Gln	Pro	Glu	Thr	Asn	Trp	Gly	Ile	Glu	Ile	Asn	Ala	Phe	Asp	Ser	Lys
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Gly	Asn	Asp	Leu	Ala	Val	Thr	Ser	Ala	Glu	Ala	Gly	Glu	Gly	Leu	Gln
			20					25					30		
Pro	Phe	Met	Glu	Val	Thr	Ile	Ser	Glu	Gly	Pro	Lys	Arg	Ser	Arg	Arg
		35					40					45			
Asp	Ser	Gly	Leu	Asp	Cys	Asp	Glu	Asn	Ser	Pro	Glu	Ser	Arg	Cys	Cys
	50					55				60					
Arg	Tyr	Pro	Leu	Thr	Val	Asp	Phe	Glu	Asp	Phe	Gly	Trp	Asp	Trp	Ile
65					70					75					80
Ile	Ala	Pro	Lys	Arg	Tyr	Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu
				85				90					95		
Tyr	Met	His	Leu	Gln	Lys	Tyr	Pro	His	Thr	His	Leu	Val	Asn	Lys	Ala
			100					105					110		
Asn	Pro	Arg	Gly	Thr	Ala	Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser
		115					120					125			
Pro	Ile	Asn	Met	Leu	Tyr	Phe	Asn	Arg	Lys	Glu	Gln	Ile	Ile	Tyr	Gly
	130					135					140				
Lys	Ile	Pro	Ser	Met	Val	Val	Asp	Arg	Cys	Gly	Cys	Ser			
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<220>
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	Val	Thr	Ser	Thr	Glu	Ala	Gly	Glu	Gly	Leu	Gln	Pro	Phe	Met	Glu	Val	
	1				5					10					15		
aag	att	tcg	gag	ggc	ccg	aag	cgc	tcc	agg	aga	gat	tcg	ggc	ctg	gac		97
Lys	Ile	Ser	Glu	Gly	Pro	Lys	Arg	Ser	Arg	Arg	Asp	Ser	Gly	Leu	Asp		
			20					25					30				
tgt	gat	gag	aac	tcc	ccc	gag	tcc	cgc	tgc	tgc	cgg	tac	ccc	ctc	acg		145
Cys	Asp	Glu	Asn	Ser	Pro	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr		
			35					40				45					
gtg	gac	ttt	gaa	gac	ttt	ggc	tgg	gac	tgg	att	att	gcc	ccc	aag	cgc		193
Val	Asp	Phe	Glu	Asp	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg		
	50					55					60						
tac	aag	gcc	aac	tac	tgc	tct	ggg	gag	tgc	gag	tac	atg	cac	ctg	cag		241
Tyr	Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Glu	Cys	Glu	Tyr	Met	His	Leu	Gln		
	65				70				75						80		
aag	tac	ccc	cac	acc	cac	ctg	gtg	aac	aag	gct	aac	cct	cgc	ggc	acc		289
Lys	Tyr	Pro	His	Thr	His	Leu	Val	Asn	Lys	Ala	Asn	Pro	Arg	Gly	Thr		
				85					90					95			
gcg	ggg	ccc	tgc	tgc	acc	ccc	acc	aag	atg	tcc	ccc	atc	aac	atg	ctc		337

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Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu
 100 105 110

tac ttc aac cgc aaa gag cag atc atc tac ggc aag atc ccc ttc atg
 Tyr Phe Asn Arg Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ser Met
 115 120 125

385

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 Val Val Asp Arg Cys Gly Cys Ser
 130 135

412

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 Cys Asp Glu Asn Ser Pro Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr
 35 40 45
 Val Asp Phe Glu Asp Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg
 50 55 60
 Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Tyr Met His Leu Gln
 65 70 75 80
 Lys Tyr Pro His Thr His Leu Val Asn Lys Ala Asn Pro Arg Gly Thr
 85 90 95
 Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu
 100 105 110
 Tyr Phe Asn Arg Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ser Met
 115 120 125
 Val Val Asp Arg Cys Gly Cys Ser
 130 135

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